



Designation: F1199 – 88 (Reapproved 2010) F1199 – 88 (Reapproved 2015) American National Standard

Standard Specification for Cast (All Temperatures and Pressures) and Welded Pipe Line Strainers (150 psig and 150°F Maximum)¹

This standard is issued under the fixed designation F1199; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This specification covers all cast strainers and welded strainers in services up to 150 psig and 150°F (1 MPa and 65°C). For welded strainers used in services above 150 psig and 150°F, see Specification **F1200**.

1.2 This standard provides the minimum requirements for the design, fabrication, rating, marking, and testing of cast and welded pipe line strainers for services above 0°F (–18°C).

1.3 Strainers manufactured to this specification are acceptable for use in the marine environment.

1.4 The values stated in inch-pound units are to be regarded as the standard. The values given in parentheses are for information only. Mathematical conversions to SI units that are provided for information only and are not considered standard.

1.5 The following safety hazards caveat pertains only to the test methods portion, Section 8, of this specification. *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*²

F1200 Specification for Fabricated (Welded) Pipe Line Strainers (Above 150 psig and 150°F)

2.2 *ANSI Standards:*³

B2.1 Pipe Threads

B16.1 Cast Iron Pipe Flanges and Flanged Fittings

B16.3 Malleable Iron Threaded Fittings

B16.4 Cast Iron Threaded Fittings

B16.5 Steel Pipe Flanges and Flanged Fittings

B16.11 Forged Steel Fittings, Socket-Welding and Threaded

B16.15 Cast Bronze Threaded Fittings

B16.24 Bronze Pipe Flanges and Flanged Fittings

B16.25 Buttwelding Ends

B31.1 Power Piping

2.3 *MSS Standards:*⁴

SP-51 150 lb Corrosion Resistant Cast Flanges and Flanged Fittings

SP-63 High Strength Wrought Welding Fittings

2.4 *ASME Standard: Standards:*⁵

ASME Boiler and Pressure Vessel Code, Section VIII, Code Section VIII, Division 1, Pressure Vessels Pressure Vessels

¹ This specification is under the jurisdiction of ASTM Committee F25 on Ships and Marine Technology and is the direct responsibility of Subcommittee F25.11 on Machinery and Piping Systems.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036-10036, <http://www.ansi.org>.

⁴ Available from American Society of Mechanical Engineers (ASME), ASME International Headquarters, Three Park Ave., New York, NY 10016-5990.

⁵ Available from Manufacturers Standardization Society of the Valve and Fittings Industry (MSS), 127 Park St., NE, Vienna, VA 22180-4602-22180-4602, <http://www.mss-hq.org>.

⁶ Available from American Society of Mechanical Engineers (ASME), ASME International Headquarters, Two Park Ave., New York, NY 10016-5990, <http://www.asme.org>.

3. Terminology

3.1 Definitions:

3.1.1 *basket or element*—the replaceable part in a strainer that performs the barrier separation of solid particles from flowing fluid. It is normally removable for cleaning and servicing and can be furnished in a wide variety of materials, particle size removal capability, straining area, and types of construction. Interchangeable baskets or elements are normally available for a given make, model, and size strainer.

3.1.2 *maximum allowable working pressure (MAWP)*—the highest internal pressure that the strainer can be subjected to in service. The maximum nonschock working pressure for which a strainer is rated by the manufacturer.

3.1.3 *maximum design temperature*—the maximum temperature for which a strainer is rated by the manufacturer.

3.1.4 *strainer*—a device which, when installed in a pipe line, provides a mechanical means of removing solids from a flowing liquid or gas by using a barrier element.

3.1.5 *straining open area*—the net effective open area of the clean element through which the fluid can pass.

4. Classification

4.1 Strainers may be classified into three general construction categories, simplex, duplex (or multiplex), and automatic (self-cleaning), as follows:

4.1.1 *Simplex*—A strainer consisting of a single basket or element chamber that normally requires the flow through the unit to be shut down before cleaning.

4.1.1.1 Classifications of simplex strainers based on port alignment relative to basket or element chamber are *Y*, *T*, *Z*, and others.

4.1.2 *Duplex (or Multiplex)*—A strainer usually consisting of at least two basket or element chambers separated by a valve (or valving) that permits continuous flow of fluid through one chamber while the other is accessible for cleaning.

4.1.3 *Automatic (Self-Cleaning)*—A strainer providing some means for back-flushing or cleaning of the straining element while the unit is in service. It can have one or more elements and may require periodic shutdown for maintenance and inspection.

4.2 Strainers may be further classified by pressure ratings and types of port connections, port alignments relative to unit center lines, cover closures, valve types (in duplex), types of baskets or elements, materials of construction, and other features of design.

5. Ordering Information

5.1 Orders for products under this specification shall include the following information as applicable. If a manufacturer's standardized product is being ordered, include all data needed by the manufacturer to define the product.

5.1.1 Make.

5.1.2 Model (simplex or duplex).

5.1.3 Port size.

5.1.4 Port connections.

5.1.5 Maximum allowable pressure/temperature rating.

5.1.6 Body and cover material.

5.1.7 Type of cover closure.

5.1.8 Basket (element) material.

5.1.9 Basket hole size.

5.1.10 Optional design features.

5.1.11 Certification (see 8.1.2.1 and Section 9).

5.1.12 This ASTM standard designation number.

5.1.13 Additional requirements or testing as contracted by the manufacturer and purchaser.

5.2 If a product is to be specified by performance criteria rather than model description, then the following should be specified:

5.2.1 Maximum allowable clean pressure loss at a given flow capacity of a given liquid at a given velocity.

5.2.2 Temperature and pressure.

5.2.3 Straining area.

5.2.4 Minimum basket rupture differential pressure (see 7.4).

5.2.5 Maximum valve seepage rates (see 7.3).

5.2.6 Certification (see 6.2, 8.1.2.1, and Section 9).

5.2.7 For self-cleaning strainers, specify basket cleaning effectiveness and endurance testing.

5.3 In general, the standard product description should not be mixed with the performance criteria because conflicting specifications can result (for example, maximum allowable pressure loss inconsistent with product size).